

SAFETY BULLETIN



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Failure to Detect Proper Plug Seal Causes Subsea Gas Release



Gas bubbles from the tubing after unlatching tree



SRP Plug set inside the Tree Production Stab

On May 1, 2017, during a subsea production tree removal operation, the tubing hanger plug was inadvertently set within the bottom portion of the tree production stab of the tubing hanger. As a result, when the tree was pulled, the tubing hanger plug was pulled with the tree, thus leaving the well without a secondary barrier. The Surface Controlled Subsurface Safety Valve (SCSSV) served as the only safety barrier in the tubing. Also, gas inside the tubing above the SCSSV was released into the environment, causing hydrates to form on the bottom of the tree.

Tight clearance combined with potential debris appear to have prevented the plug from landing in the appropriate profile. Both of these factors led to a false indication that the plug was properly set due to a successful pressure test. It should be noted that the components involved in this failure are common to many subsea systems in the Gulf of Mexico.

Therefore, BSEE recommends operators consider:

- Evaluating the risk associated with this operation, especially the factors that can contribute to a false indication of properly setting a tubing hanger plug.
- Reviewing the design specifications with manufacturers in order to establish the relationship between the plug and the tubing hanger profile.
- Implementing measures to minimize debris, hydrates, or other possible obstructions to clearance when use of a tight-clearance tool is needed, such as displacing the tubing down to the SCSSV with hydrate-inhibited fluid as a precautionary measure.

A **Safety Bulletin** is a tool used by BSEE to share lessons learned from an incident or near miss. It also contains recommendations that should help prevent the recurrence of such an incident or near miss on the Outer Continental Shelf.